COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

February 14, 2007 Meeting

FACILITATOR'S SUMMARY NOTES ON FUTURE ACTIONS

Facilitator: Robin Harkless
Notes: Erin Halton

The following notes are a summary of issues that are intended to point out future actions or issues that may need further discussion at upcoming meetings. These notes are not intended to be the "record" of the meeting, only a reminder for TMT members.

Final Water Supply Forecasts

Cathy Hlebechuk, COE, presented on several water supply forecast links to the TMT agenda, including end of month flood elevation targets and 2007 runoff forecasts. The end of February flood control target for Libby is 2396'. The April-August forecast for Libby is 6.6 maf / 103.9% of normal. The Dalles April-August forecast is 88.2 maf / 94.8% of normal. The Grand Coulee January-July forecast is 102% of normal of normal. Forecast for Lower Granite is 78% of normal, which is among the lowest in the basin. TMT members noted that Dworshak forecasts from the National Weather Service River Forecast Center (RFC) were much higher than those forecasted by the COE (93% vs. 78%, respectively.) Hlebechuk said that the March final forecasts will be available on the RFC site sometime the week of 3/5.

Action/Next Steps: Cathy Hlebechuk, COE, said she would look into why there was a significant difference between the COE and RFC forecasts for Dworshak, and report via email to TMT.

Note: Hlebechuk sent out an email response, following the TMT meeting, summarized below:

"The main difference is for the February final forecast the Corps' equations do not include rain, just snow. In contrast, the RFC's equations include both rain (extremely heavy in November) and snow. Please note the RFC Lower Granite February Final forecast is 78% of normal for the April - July period.

** The Corps uses the 71-year average of 2683 to come up with the percent of average and the RFC uses the 30 year normal of 2644 to come up with the percent."*

2007 Water Management Plan

Bernard Klatte, COE, said that he had received comments from NOAA and that if other agencies wished to comment on the revised draft of the 2007 WMP, they could still do so. CRITFC and ID said that they planned to submit comments, and would send them to Klatte before the next TMT meeting on 2/28.

Action: TMT members were reminded to review the draft WMP and submit edits, comments, etc. based on 2007 expectations to Bernard Klatte, COE, before the next TMT meeting on 2/28.

Chum Incubation Status

Rick Kruger, OR, said that the total chum population estimates for Multnomah Falls were 288 +/- 37; I-205 numbers were 918 +/- 31; Hamilton Creek numbers were 192 +/- 125; and the final numbers for Ives Island were 406 +/- 156.

Action/Next Steps: Rick Kruger said that he would post final chum data (counts/maps of redds) for TMT as soon as it is available. Cindy LeFleur, WA, said that she would get final numbers posted as soon as it is available, and Margaret Filardo, Fish Passage Center, said that she would add final chum numbers to the FPC website when they become available.

Adult Kelt Passage Study

Bernard Klatte, COE, said the NW Portland District had requested an extension to operate the Corner Collector past March 31, to April 10th for a Kelt Passage hydroacoustic evaluation at the Bonneville corner collector. Klatte said the additional 10 days of 5 kcfs spill should not affect TDG or storage levels. Klatte also added that the large crane used to move and install the Turbine Intake Extension Screen (TIES) will be out of service until the end of August and that a mobile crane (100-ton) needs to be brought to the project to open/close the corner collector headgate/bulkhead. Also, since the crane is out of service (OOS) the TIES will not be installed in the B2 powerhouse, which could impact any study results and fish movement in the B2 forebay. Klatte also reported that the corner collector cannot be operated until after a barge has completed delivering Vertical Barrier Screens (VBS) in the forebay at B2 main unit 11 on 26-27 February. If BON needs to spill more than the corner collector (5 kcfs), it may require up to 16' tailwater to avoid TDG exceedances of 105% as measured at the Warrendale gauge. Robin MacKay, BPA, said that the potential for increased flow needs and drawing from Grand Coulee storage will need to be carefully balanced with maintaining the 13' tailwater, as requested for chum incubation. Jim Adams said the COE ran scenarios that looked at historical actual operations of different spill levels, and their corresponding TDG levels confirmed that the extra spill, if needed, would increase TDG levels as measured at Warrendale to approximately 114-115% with 50 kcfs spill and 116-117% with 75 kcfs spill. Those TMT members present at the meeting: BOR, OR, ID, WA, NOAA, BPA, did not object to the extending the operation of the B2 Corner Collector for the Kelt passage evaluation.

Transportation Permit Update

Paul Wagner, NOAA, said that the transportation permit would officially be extended for 1 year, as the new BiOP has not yet been completed.

Ice Harbor Summer Outage

Mike Viles, BPA Transmission Operations, gave a power point review of an 11/2006 tripped Sacagawea transformer, which is currently out of service. This transformer, he

noted, is very important in transferring power into the Tri-Cities area. In order to address this, a mobile capacitor group will be installed around 4/1 and another by 7/1; both of which will be used until the transformer can be brought back online. BPA does not expect this issue to cause any in operational restrictions, and hope to have the transformer back in service by next spring.

Operations Review

Reservoirs: Grand Coulee elevation was at 1270.6' with outflows of about 100kcfs to meet the 13' minimum tailwater below Bonneville and the 70 kcfs minimum below Priest Rapids; Hungry Horse was at 3533.85' and releasing 2.5kcfs to meet Columbia Falls minimums; and Libby was at 2390.08', with minimum outflows and an end of February target elevation of 2396'. Albeni Falls was at 2052.9' and outflows of 15 kcfs; Dworshak was at 1530.2', with an end of February target elevation of 1531'*; Bonneville tailwater was at 13'.

* (Cathy Hlebechuk, COE, corrected the Dworshak end of February target via an email: "The end of February flood control target is 1551', not 1531', as was stated during the 2.14.07 meeting.")

Fish: Cindy LeFleur, WA, reported 2007 spring/summer forecasts for adult fish: Upriver Spring Chinook - 78,500 (vs. 132,100 returns in '06); Summer Chinook above Priest - 45,600 (vs. 76,200 in '06); Sockeye - 27,300 (vs. 37,100 in '06 – noted as a continued poor return); Upriver Steelhead – 314,600 (vs. 329,200 in '06); Columbia Fall Chinook above Bonneville – 182,400 (vs.230,400 in '06); Bonneville Pool Spring Creek Hatchery stock – 21,800 (vs. 27,900 in '06 – noted as a very poor return); and a total for Columbia River Fall stocks of 327,000 (vs.415,100 in '06). LeFleur noted that it was early for Spring Chinook, but that a few had been caught already in fisheries.

LeFleur also said that OR and WA were beginning an active sea lion hazing program, in the hopes of hazing while the sea lions are targeting sturgeon.

Action/Next Steps: LeFleur said she would send a summary report of the spring/summer adult forecasts to the COE, for posting on the TMT website.

Power: Nothing to report at this time.

Water quality: Jim Adams, COE, said that monitors at Camas/Washougal will likely be up and running by 4/1.

Next TMT Face-to-Face Meeting, February 28th, 9:00-noon

Agenda Items include:

- WMP final review
- Spring Creek Hatchery
- Chum Emergence Update
- Tentative: Sea Lion Update

Columbia River Regional Forum
Technical Management Team Meeting
February 14, 2007

1. Welcome and Introductions

Today's meeting was chaired by Cathy Hlebechuk, with representatives from COE, BPA, NOAA-F, CRITFC, PNGC, BOR, and the states of Idaho, Washington and Oregon in attendance either in person or by phone. The following is a summary (not a verbatim transcript) of the topics discussed and decisions made at the meeting. Anyone with questions or comments about these notes should provide them to the TMT chair or bring them to the next meeting.

2. Review of Meeting Minutes

There were no comments on the January 31, 2007, minutes as posted on the TMT website.

3. Final Water Supply Forecasts

A. Columbia River Summary. Cathy Hlebechuk (COE) showed TMT members how to access the Corps' water supply forecasts and end-of-month flood control elevation targets, which are attached to the TMT agenda for this meeting. By clicking the first link on each page, it is possible to see a summary of Columbia River flood control for all the dams, which the Corps prepares every month.

B. Libby Dam. The water supply forecast for April - August is 6.6 maf, which is 104% of normal. The end-of-January flood control elevation target for Libby was 2,393.7 feet, based on the January final forecast. The target for the end of February is 2,396 feet, based on the February final forecast, which is higher than the end-of-month forecast last month. This is because the water supply decreased from 110% to 104% of normal. This is why Libby is currently on minimum flows, Hlebechuk said. The end-of-month target for March at Libby is 2,392.4 feet. Hlebechuk explained that the second link is for the COE Libby forecast, which is more detailed than the summary sheet.

C. Dworshak Dam. The chart shows the end of March flood control elevation target for Dworshak is 1,551 feet. Paul Wagner (NOAA-F) questioned the discrepancy between the RFC and COE forecasts for Dworshak, which are 93% vs. 73% of normal, respectively. Hlebechuk contacted the Corps and RFC forecasters to explain the discrepancy. The two offices use different equations to develop the forecasts. The RFC forecast includes rain, which was heavy in November, and snow; the COE forecasts do not include rain, just snow.

D. RFC Forecasts. This link from the TMT webpage goes to the National Weather Service's data on various forecasts, which Steve King described in greater detail at the January 31, 2007, TMT meeting, Hlebechuk said.

The January-July forecast for Grand Coulee is 63.9 maf, 102% of normal. The April-August forecast for The Dalles is 88.2 maf, 95% of normal. The April-July forecast for Lower Granite is 16.8 maf, 78% of normal. The Snake basin is the driest of all the river basins, Hlebechuk noted.

Russ Kiefer (Idaho) asked what the 30-day to 90-day precipitation forecast is for the basin. The 90-day extended forecast shows that El Nino trend is breaking down, so we could see a late winter blast of moisture from the mountains, Kyle Dittmer (CRITFC) said.

4. Finalization of Water Management Plan Fall/Winter Update

The Water Management Plan and fall/winter update have been posted to the TMT website; the group decided to finalize them at the February 28 TMT meeting, given that more comments are coming. Bernard Klatte (COE) asked people to review Appendix 1, Emergency Protocols. Robin Harkless noted three areas of change for people to review: Libby operations, chum spawning considerations, and Snake River operations. Comments on the fall/winter update should be sent to Bernard Klatte (COE).

5. Chum Incubation Status – I-205 and Multnomah Falls Surveys.

Rick Kruger (ODFW) gave preliminary estimates of the number of chum spawners in the Columbia this season. In the Multnomah Creek area, it's 288 plus or minus 37. In the I-205 area, it's 918 plus or minus 31. For Hamilton Creek, it's 192 plus or minus 125. These preliminary estimates are based on live and dead recoveries using live tagging and adults removed for broodstock.

For Ives Island, the final population estimate is 406 plus or minus 156, based on carcasses only. These numbers include fish of both genders, all of whom were there to spawn, regardless of whether they succeeded.

Scott Bettin (BPA) asked, is it possible the counts are low because it was a high flow year? The counts are indeed low, but there's a high confidence level in these estimates, due to the method of recovering carcasses, Kruger replied. Cindy LeFleur (WDFW) will give the final chum redd population numbers to Kruger for posting on the TMT website when they are available. The group agreed to add chum incubation to the TMT meeting agenda after the final numbers become available. Kruger said he will compile the final information on redd locations. Bettin requested that the numbers also be posted on the Fish Passage Center website.

6. Adult Fallback Hydroacoustic Study

The Corps Northwest Portland District has been preparing to do a study of steelhead kelt passage through the Bonneville Second Powerhouse corner collector through March. Klatte reported that the BON Turbine Intake Extension Screen (TIES) crane is currently out of service. Initially, it was planned to be out until April, but now it will probably be out until the end of August. The crane is used to insert TIES which are large square structures that extend the pier noses and change the hydraulics to enhance fish passage. The crane is also used to open and close the Corner Collector headgate and bulkhead. With the TIE crane out, a 100-ton mobile crane will be required onsite to open and close the headgate and bulkhead to the Corner Collector. Klatte introduced Bob Wurtheimer (COE), a lead researcher for the kelt passage study. COE requested an extension of the study end date from March 31 to April 10, which will require that a mobile crane be used only to open the corner collector in March and close it at the end of the fish passage season (31 August) or in the event of TDG exceedances below BON. Based on the existing protection level for chum of maintaining a 13 foot tailwater below Bonneville, the additional 10 days of spill into April should not affect TDG levels or storage, based on the most recent forecasts. Klatt noted that at Powerhouse 2 main unit 11, a barge unloading vertical barrier screens (VBS) will require the corner collector to be closed on February 26-27.

Regarding potential impacts to fish, Russ Kiefer (Idaho) asked, would higher entrainment of the turbines affect the corner collector? It could go either way, Wurtheimer said, noting that the TIES cranes haven't been as successful in improving fish survival rates as there were expected to be. The mobile crane will arrive onsite March 1 to open the corner collector for the fallback study, Klatte said. If the Corps request for an extension is accepted, they will keep the corner collector open from April until the end of spill season on Aug. 31. The request involves keeping the corner collector open for an additional 9 days and 23 hours. Russ Kiefer (Idaho) Robyn MacKay (BPA), Paul Wagner (NOAA-F) and other group members approved the COE request to extend the study for the extra time the Corner Collector will be open.

The group discussed the merits of changing the study name. Fallback has negative implications for migrating adults, but getting kelts to go downstream of dams is a good thing, Russ Kiefer (Idaho) said. He suggested calling it a kelt passage study.

The group also discussed the Spring Creek Hatchery release and the effects of drafting additional water from GCL to produce additional spill for these fish and protect chum redds from TDG, all while meeting the April 10 required elevation of 1,280 feet at GCL. Spill through the spillway at 50 or 75 kcfs would require a tailwater of at least 16 feet below Bonneville to keep TDG at a level that would not harm chum redds, Jim Adams (COE) said. Raising the tailwater at

Bonneville requires additional flow, which would come from Grand Coulee, and we're already walking a tight line between keeping flows high enough for chum and having enough storage left for spill season beginning April 10, Robyn MacKay (BPA) said. The tradeoff for each foot of tailwater is 5-10 kcfs drawn from Grand Coulee storage. She asked, does the Corner Collector have gas impacts? It generates high levels of gas particularly when tailwater elevations are low, Adams said, citing a study done when the tailwater was at 8 feet. Because we're already operating at a 13-foot elevation, and the corner collector is at 16 feet, the outflow experiences only a 3-foot plunge, so gas impacts should be minimal.

Jim Adams (COE) showed the group how to access historical data regarding the relationship of tailwater elevations to TDG levels. This information is available on the TMT website's historical page. According to SYSTDG modeling, COE estimated flat outflows of 140 kcfs total with a 13 foot tailwater would result in TDG levels of around 116%, Adams said. That would require nearly 4 feet of compensation passage, meaning COE would have to run the tailwater at 17 feet with 140 kcfs total outflows. With 75 kcfs of spill, gas levels would be around 116%. With 50 kcfs of spill, total outflows would be 120-130 kcfs, with a 12 foot tailwater and TDG levels around 114%. With 114% TDG, 3 feet of compensation passage would be needed, based on data from April 2005. Kiefer (Idaho), MacKay (BPA), Wagner (NOAA-F) and other group members approved the COE request to keep the corner collector open.

7. Transportation Permit Update

NMFS will extend the transportation permit for another year, Paul Wagner (NOAA-F) said. Normally a new permit is issued with each BiOp and environmental assessment, but this year the remand process has put the previous BiOp on hold, and the new BiOp isn't finished yet. Instead of issuing a new permit, which the court would regard as a significant action, NMFS will extend the current permit in accordance with the remand process.

8. Ice Harbor Spring/Summer Outage

Mike Viles (BPA) gave a Powerpoint presentation on what is currently the highest transmission reliability problem in the Northwest electrical grid. On Nov. 22, the Sacajawea transformer near the Tri Cities area tripped out of service. The giant piece of equipment must be removed from the site for repairs, which could take up to a year. Sacajawea is a 500/115-KV transformer with all three phases in one unit, a configuration that creates internal reliability problems. Its absence poses a risk to voltage stability in the Tri Cities. Because it is the only transformer of its kind on BPA's system, there is no replacement to use during the outage. Ice Harbor came online in the early '60s, and Sacajawea was added in the mid-'70s to transmit the power from new generators at Ice Harbor out of the area.

Viles described the current transmission system in the Tri Cities area. There are three main sources of power and voltage support going into Franklin Substation: generation from Ice Harbor, the Franklin 230/115 kV bank, and the Sacajawea 530 kV bank. The absence of Sacajawea means one less source of voltage support for the Tri Cities area, as it is the main source of 500 kV transmission there. The 500/115 bank that goes to Sacajawea integrates Ice Harbor generation from McNary to Franklin Substation. If Sacajawea is not available, and generation levels are low at Ice Harbor, the Franklin transformer – a vital source of voltage support – could go out of service. Weaker 115-kV adjacent transmission lines wouldn't support the system if the Franklin transformer goes out.

Viles presented BPA's solution: two 20 MVAR mobile capacitors at Ice Harbor, which can be moved from substation to substation as needed. They provide reactive power which can boost voltage in the event of an outage. One of the capacitors will arrive at Franklin by April 1, the second by July 1, Viles said. Hopefully, this will smooth over the voltage reliability situation in the Tri Cities during the Sacajawea repairs.

A participant asked how this would impact the summer peak in the Tri Cities. By adding the capacitors, it should be possible to operate safely with just one generator on at Ice Harbor, Viles said. There is no ceiling on how much generation can be safely transmitted out of the area. The problem basically involves protecting the system in the event of extremely heavy loads. BPA is considering the possibility of maintaining a spare replacement for Sacajawea.

9. Operations Review

A. Reservoirs. Grand Coulee is at 70.6 kcfs of spill in order to maintain a 13 foot tailwater at BON and 70 kcfs of Hanford Reach protection flows at Priest Rapids, John Roache (BOR) reported.

Hungry Horse is at about 2,500 feet elevation, releasing 33.85 kcfs to maintain the Columbia Falls minimum flow.

Libby is at 2,390.08' elevation with minimum flows, Cathy Hlebechuk (COE) said. For the end of the month, another 3 feet of elevation will be needed to reach the end of February flood control target and inflows have been below 4 feet, so that might be a problem. The reason for this is that the January final forecast was 110% and February final forecast was 104%, with a significant difference of 17 feet between the two forecasts for the end of February flood control targets.

Dworshak is at 1,530 feet, with about a foot of increase needed by the end of the month for flood control, which shouldn't be a problem.

[Correction: Cathy Hlebechuk, COE, corrected the Dworshak end of February target via an email: “The end of February flood control target is 1551. The project is on minimum flow to try to fill to this elevation. The project will be below 1551 at the end of the month.”]

Albeni Falls is at 2,052.9 feet, with 15 kcfs of spill.

Bonneville is running close to a 13 foot tailwater.

B. Fish. For upriver spring chinook destined for above Bonneville, WSFS is predicting a run of 78,500 fish this year, Cindy LeFleur (WSFS) said. That compares with last year’s return of about 132,100 fish, down about half from last year’s return.

For summer chinook June 13-July 31 runs, WSFS is predicting 45,600; these fish go only above Priest Rapids Dam, not in the Snake River system. That compares with a run of 76,200 fish last year. LeFleur explained that the COE and WSFS use different accounting systems for spring and summer chinook. The WSFS counts spring chinook at Bonneville Dam through June 15.

Sockeye runs are at 27,300, compared to 37,100 last year, which continues a trend of poor sockeye returns in recent years.

Summer steelhead upriver above Bonneville are predicted to be at 314,600, compared to last year’s count of 329,200. Steelhead runs have been fairly steady for a number of years.

Fall chinook destined for the area above Bonneville (which includes Hanford, Priest Rapids hatchery, the Snake, Deschutes and Yakima rivers) are at 182,400, compared to last year’s return of 230,400 fish.

Other important stocks above Bonneville Dam are primarily the Bonneville Pool hatchery stock, Spring Creek hatchery fish, with a prediction of 21,800 this year, compared to 27,900 last year. LeFleur emphasized that is a very poor return for these fish. At least 7,000 are needed in the hatchery to meet escapement goals.

Fall chinook stocks in the upper and lower Columbia are predicted to be at 337,200, compared to an actual return of 415,100 fish last year.

Across the board, all of the runs are down compared to last year, LeFleur said. The group agreed they would like to see a one-page summary regarding fall and spring/summer sockeye returns linked to today’s agenda on the TMT website.

Kyle Dittmer (CRITFC) asked about sea lion sightings; LeFleur said they had been preying on sturgeon below Bonneville since December. Wurtheimer (COE) noted this is the earliest the sea lions have shown up there. The trend is for them to arrive earlier and stay longer. WSFWS will be beginning an active hazing program soon, if it hasn't already begun, a cooperative effort between two states and possibly other agencies, LeFleur said.

C. Power. There is no news at this time, Robyn MacKay (BPA) said.

D. Water Quality. Forebay monitors will be in place by April 1 prior to the beginning of spill in the Snake River, Jim Adams (COE) said. No installations have been scheduled yet for the Columbia. Monitors will be installed in the Bonneville forebay and at Camas/Washougal gage by March 23 in preparation for Spring Creek Hatchery runs. Warrendale gage is up and running continually until the end of chum emergence in late May. Installation of the Cascade Island monitor is an area of uncertainty, Adams said. The COE is waiting for Spring Creek Hatchery deliberations to conclude because there is no point in placing a water quality monitor there if no spill will be coming through the spillway.

10. Next TMT Meeting

The next meeting is scheduled for Feb. 28, Harkless said. The following items will be on the agenda: finalizing the Water Management Plan fall/winter update, a Spring Creek Hatchery update, an update on sea lion predation, and the usual operations review. Chum emergence is a tentative item, depending on when temperature information becomes available, Kruger (ODFW) said. Russ Kiefer gave a heads up that Idaho is beginning internal discussions of the Lake Pend Oreille decision tree. Anyone with items to add to the Feb. 28 TMT agenda should contact Jim Adams or Cathy Hlebechuk. This summary prepared by BPA contractor Pat Vivian.

Name	***Affiliation***
Russ Kiefer	Idaho
Robyn MacKay	BPA
Jim Adams	COE
Paul Wagner	NMFS
Rick Kruger	ODFW
Cathy Hlebechuk	COE
Kyle Dittmer	CRITFC
Erin Halton	DSC
Ruth Burris	PGE
Tony Norris	BPA
Scott Bettin	BPA
Bob Wurtheimer	COE
Dan Spear	BPA

Donna Silverburg	DSC
Holli Krebs	Bear Energy
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